winds had alſo a *progreſſive* motion. Had the different winds by which the whirlwinds were formed been of equal violence, the whirlwinds would have been ſtationary conſiſting only of a circular motion; but being of unequal violence, the whirlwinds had a progreſſive motion, proceeding in different directions at different places, according to the direction of the ſtrongeſt wind.

The *ſummer* preceding this hurricane had been in ſome reſpects different from what is common in this part of the country. There had been an uncommon drought for two months before, which was no where more ſevere than in the towns upon the river; and in no ſummer for ſeveral years, have we had ſo much hot weather. This circumſtance is agreeable to the preſumption of theory; for, if whirlwinds and hurricanes are derived from the great rarefaction of ſome part of the atmoſphere, it might be expected that the times in which they would happen, would be in the moſt calm, or hot weather.

N° X.

A Letter from J. MADISON, *Eſquire, to* D. RITTENHOUSE, *Eſquire.*

William and Mary College, Virginia, November, 1779.

DEAR SIR,

AGREEABLY to promiſe, I now tranſmit you a ſeries of obſervations upon our climate. They comprehend an entire year, and part of the ſucceeding. I thought once of ſending you only a mean of the obſervations for each month, but as it was a part of our natural hiſtory, which has never yet been made public, I have therefore ſent a copy of the journal. Some ſingular cir-

cumſtances too attending the barometer I thought deſerved to be particularly noted, which could not nave been done had the firſt idea been adopted. For the obſervations upon the barometer not only ſhew us the different ſtates of the atmoſphere, but, perhaps, may throw farther light upon the true cauſe of the Aurora Borealis. The fact is, that a fall of the barometer always ſucceeds that phenomenon. The frequency of its appearance lately, gave me an opportunity of obſerving this effect at different times. It has for ſome time been ſuppoſed (after Dr. Franklin had firſt given riſe to the opinion) to be an electrical appearance; and I think, the levity of the atmoſphere, as proved by the barometer, adds great weight to that ſuppoſition: ſince it is well known to every electrician, that a rarefaction of the air, in our experiments, will always produce ſimilar appearances. One circumſtance indeed was obſervable, that a change of weather, to wet, generally ſucceeded; but as this effect was not ſo conſtant, it was not much attended to. But the barometer by ſhewing that the atmoſphere is actually lighter, and of conſequence more rarefied at the time of ſuch appearances than at others, evinces at leaſt, that it is in a ſtate the moſt likely to exhibit them; it is to be obſerved alſo, that the greateſt fall of the barometer is not prior to, but always ſucceeds this appearance; ſhewing that the rarefaction firſt begins in the upper parts of the atmoſphere.

It is remarkable that the range of the barometer was not more than one inch and a tenth throughout the whole year, nor do I remember ever to have ſeen a greater difference at any time not included in the journal; whilſt we ſee in other countries, the atmoſphere undergoing changes ſo great as to effect a difference of three or four inches. Whence is it then that we are expoſed to more violent ſtorms of wind and rain? Perhaps indeed the changes here, though not ſo great, may be more ſudden, of which ſome remarkable inſtances may be ſeen in the journal.

Our

Our coldeſt winds, as well as the moſt violent, are the north-weſt. The ſouth and ſouth-weſt winds are the hotteſt, though the ſenſations of heat to which we are expoſed, do not correſpond to the different degrees marked by the thermometer, as they depend much upon a current of air with which we are generally favoured about the hotteſt time of the day, and copious ſweating. I do not recollect ever to have ſeen the thermometer here at more than 95, though Dr. Franklin mentions that in June 1750, it ſtood at 100 in the ſhade at Philadelphia, when he obſerves, "I expected that the natural heat of the body, 96, added "to the heat of the air, 100, ſhould jointly have created "or produced a much greater degree of heat in the body; "but the fact was, that my body never grew ſo hot as the "air that ſurrounded it, or the inanimate bodies immerſ-"ed in the ſame. For I remember well, that the deſk, "when I laid my arm upon it, a chair when I ſat down "in it, all felt exceeding warm to me, as if they had been "warmed before the fire. And I ſuppoſe a dead body "would have acquired the temperature of the air, though "a living one, by continual ſweating, and by the eva-"poration of that ſweat was kept cold." I have been the more particular in tranſcribing this paſſage from the works of this philoſopher, as it certainly ſhews to whom the merit of certain late diſcoveries, which have made ſo much noiſe in the philoſophical world, moſt juſtly belongs; I mean, that power which the human as well as all animate bodies have, of counteracting the heat of an atmoſphere in which they are placed. For what do all the experiments upon heated rooms evince, farther than had before been publiſhed by the doctor? It is thus that Franklin ſetting in his chair, like Newton reaſoning upon the figure of the earth, could ſhew what muſt coſt others infinite labour and fatigue. But, though the effect was obſerved and attributed to evaporation, yet I do not remember that it is any where ſhewn in what manner eva-

poration produces cold. Hamilton, in his excellent eſſay upon the aſcent of vapors, ſpeaking of the natures of ſolution and evaporation, has theſe words, "how cold is "produced in either caſe, I cannot pretend to ſay." The doctor has given the moſt probable explanation of the manner in which it is produced by ſolution, and I think the following, which is collected from his general doctrine may be applied to evaporation. It is admitted that there is a ſtronger attraction between heat and water, or ſuch like fluid, than between heat and any other body, for on this account it is that bodies are cooled when plunged into water. When ever therefore, water for inſtance, is put upon any part of the human body, its natural heat is more attracted in that part by the water, than by the fleſh, and therefore, the water in going off in the form of vapour carries with it part of the heat, and conſequently leaves that place in a negative ſtate, or with leſs than its natural quantity. It is the ſame with the thermometer. Hence it is, that we are much hotter frequently when the thermometer ſcarcely exceeds 82 or 83, there being no current of air to carry off the moiſture from the ſurface of the body, than when it even ſtands as high as 90 or 95.

I am, with the greateſt reſpect,

Your ſervant and friend,

J. MADISON.

JULY,

JULY, 1777.

The Obſervations upon the Thermometer were made at eight, twelve and four o'clock, in the ſummer. In the winter, the laſt at three, the other obſervations at eight o'clock.

Days.	Winds.	Weather.	Barometer.	Thermometer. 8 H.	12 H.	4 H.	Obſervations.
3	N by E	Clear	30 1 3		73	73½	
4	N b E	Clear	30 1 0	69½	73	74	
5	N b E	Clear	30 0 0	70⅔	74	76,5	
6	N E	Rain	29 7 0	74	77		
7	E b N	Cloudy & rain	30 1 0	73	73	73,5	
8	E b N	Cloudy & rain	30 1 5	72	74	76	
9	S b W	Clear	30 0 8	75	78	79	
10	E b N	Clear	30 0 2	78	83	84	
11	S	Clear	30 0 2	79	82	83	
12	S W	Clear	29 8 4	80	83	85	
13	N b E	Rainy	29 7 2	79	80	81	
14	E b S	Cloudy	29 9 0	75	78	76	
15	E b N	Cloudy	29 9 0	75	78	80	
16	S E	Clear	29 9 0	79	82		
21	S W	Clear	29 9 4	77	81	82	
22	S W	Cloudy	29 8 7	79	82	82	
23	N W	Clear	29 9 2	74	75	75	
24	N b W	Clear	30 0 5	74	75	74	
25	N b E	Cloudy	30 0 5	73	73	74	
26	S W	Clear	29 9 5	74	77		
27	N b E	Clear	29 9 9	77	80	80	
28	S W	Clear	29 9 0	80	82	82	
29	W	Clear	29 3 0	80	81	82	
30	N b W	Clear	30 0 0	78	79	80	
31	N E	Clear	30 1 3	77	78	79	

Note, That the height of the mercury in the barometer is determined by a ſcale divided into inches and tenths with a nonius; ſo that 30.1.3 will be read 30 inches, 1 tenth, and 3 tenths of a tenth.

AUGUST, 1777.

Days.	Winds.	Weather.	Barometer.	Thermometer. 8 H.	12 H.	4 H.	Obſervations.
1	S W	Clear	30 1 3	77	80	83	
2	S W	Clear	30 2 4	79	83	84	
3	S W	Clear	30 1 8	83	85	88	
4	S W	Clear	30 0 8	83	85	86	Much lightening in the evening.
5*	S W	Clear	30 0 5	81	86	87	* Rain with lightening. The barometer was
6	S W	Rainy	30 0 5	82	83	82	obſerved to riſe before the rain to 30 1 0.
7	S W	Cloudy	30 0 9	80	82	80	
8	S W	Clear	30 2 2	80	82		
9	S W	Clear	30 2 2	80	84		
10	S W	Clear	30 1 7			86	It was hotter according to the ſenſation of the
11	S W	Clear	30 1 7	83	86	88	human body this evening than had been obſerved
12	S W	Clear	30 1 5	83	87	88	this ſummer. There was no wind.
13	S W	Clear	30 1 8	84	86½	88	
14	S W	Clear	30 1 3	84	86	89	
15	S W	Clear	30 0 8	84	86	91	
16	S W	Clear	30 1 0	86	88	87	Much rain and lightening. The point was dri-
17	W	Clear	30 1 4	82	84		ven off the Capitol rod, conſiderably fuſed.
18	W	Clear	30 1 4	83	85		
19	E	Cloudy	30 1 4		82		
20	W	Clear	30 1 4	79	82	83	Frequent rain.
21	W	Clear	30 1 4		82	85	
23	S W	Clear	30 1 4	82	85	86	
24	S W	Clear	30 1 2	85	86	83	Rain with lightening.
25	S W	Clear	30 1 2	83	85	83	
26	S W	Clear	30 0 6	80	84		Rain.
27	N W	Cloudy	30 0 0	82	79	79	
28	N E	Cloudy	30 1 5	76	76	76	
29	N E	Clear	30 2 6	73	75	75	
30	N E	Clear	30 1 1	73	74		
31	S W	Clear	30 2 0	74	76		

SEPTEMBER, 1777.

Days.	Winds.	Weather.	Barometer.	Thermometer. 8 H.	12 H.	4 H.	Observations.
1	S E	Clear	30 1 8	73	76	77	
2	N E	Clear	30 1 8	75	78	78	
3	N E	Cloudy	30 3 0	72	73	72	
4	N E	Cloudy	30 3 3	69	71		
5	S E	Clear	30 2 5	73	75	74	
6	S W	Clear	30 1 9	72	78		
7	S	Clear	30 1 0	78	82	80	Rain.
8	N E	Clear	30 1 7	75	76	75	
9	E	Clear	30 3 0	76	76	75	
10	S W	Cloudy	30 1 7	74	79	79	
11	S E	Clear	30 0 5	79	81		
12	S E	Clear	29 9 4	81	82	80	Rain.
13	N E	Clear	30 1 1	76			
14	S E	Clear	30 2 7	73	73	72	
15	N E	Cloudy	30 2 6	72	74	73	
16	E	Rain	30 1 6	72	71	70	
17	N W	Cloudy	29 9 0	69	69	68	Rain.
18	N E	Cloudy	29 9 0	68	67½	67	Showery.
19	E	Clear	30 0 6	69	70	70	
20	S W	Clear	30 0 6	69	77	77	
21	E	Clear	30 0 0	75	79		
22	N E	Clear	30 0 8	67	69	71	
23	N E	Clear	30 0 8	67	69	70	
24	S W	Clear	30 0 5	69	72		
25	S W	Clear	30 0 0	69	74	71	Rain.
26	N W	Cloudy	30 1 5	60	63	63	
27	N E	Clear	30 2 0	61	63	62	
28	N E	Cloudy	30 1 9	59	60	60	
29	N E	Clear	30 1 6	59	61	61	
30	N E	Cloudy	30 2 6	58	60	60	

OCTO-

OCTOBER, 1777.

Days.	Winds.	Weather.	Barometer.	Thermometer. 8 H.	12 H.	4 H.	Observations.
1	N E	Clear	30 3 0	58	61	62	
2	W	Clear	30 3 0	61	64	65	
3	S W	Clear	30 3 0	62	65	66	
4	S	Clear	30 2 6	67			
5	S	Clear	30 2 7	70	44	75	
6	S E	Clear	30 2 0	70	74	75	
7	N E	Cloudy	30 1 1	72	72	72	
8	N E	Clear	30 2 4	66	68	68	
9	S	Rain	30 0 5	67	72	71	
10	N E	Clear	30 3 0	64	65	65	
11	N	Cloudy	30 3 3	62	62	62	
12	N E	Cloudy	30 1 9	62	62	63	
13	S W	Cloudy	30 1 5	61	63	64	
14	N E	Clear	30 2 1	62	64	65	
15	N E	Clear	30 2 3	61	61	62	
16	N W	Cloudy	30 0 3	58	60	62	
17	N E	Cloudy	29 9 9	59	61	63	
18	N E	Clear	30 0 4	61			
19	S W	Clear	30 1 7	66			
28	N by E	Rain	29 6 8*	56	57		Much rain. * The loweſt.
29	S W	Cloudy	29 7 0	48			
30	W b S	Clear	30 0 0	49	59	65	
31	W	Clear	30 2 0	50	60		

NOVEMBER, 1777.

Days.	Winds.	Weather.	Barometer.	Thermometer. 8 H.	12 H.	3 H.	Obfervations.
1	N E	Clear	30 5 0	56	53	52	
2	N E	Cloudy	30 4 8		58		
10	W	Clear	30 1 3	42	49	50	The ground frozen.
11	S W	Clear	29 7 0	42	52	55	
12	W	Clear	29 9 0	47	55	58	
13	W b N	Clear	30 0 8	41	45	49	
15	N	Cloudy	30 0 8	45	47	49	Froft.
16	N	Cloudy	30 0 9	44	45	47	Wind high and cold.
17	N	Clear	30 0 0	41	52	54	* Remarkable Aurora Borealis at 7 o'clock
18	N	Clear	30 3 7	37	42	45	this evening. It was terminated towards the
19	N	Clear	30 2 9	33	39	43	eaft by the two ftars β and θ in Auriga,
20	N W	Clear	30 2 4	37	48	50	and its greateft altitude reached nearly Capel-
21	S W	Clear	30 2 4	39	55	57	la. The ftars in the tail of the Great Bear ter-
22	W b S	Clear	30 1 0	54	59	61	minated it to the weft. It is obfervable that
23	S W	Clear	30 0 7	55	59	62	the barometer was falling from the 18th, and
24	S W	Clear	30 0 5	57	59	63	was never obferved *fo low* but once, little after
25	W	Clear	30 0 3	55	56	59	the vernal equinox, throughout the whole year,
26	W	Clear	30 0 2	57	59	60	as it was fo foon after the Aurora. Its fudden
27*	N W	Clear	30 0 0	36		48	rife was alfo remarkable. It became cloudy
28	E b S	Cloudy	29 8 4	42	42	41	about one o'clock.
29†	N W	Snow	29 3 9	41	39	37	† Snow fell $7\frac{1}{2}$ inches in 24 hours.
30	N W	Rain	29 4 4	39	39	40	

DECEMBER, 1777.

Days.	Winds.	Weather.	Barometer.	Thermometer. 8 H.	12 H.	3 H.	Obſervations.
1	W	Clear	29 7 7	35	45	47	
2	W	Clear	30 4 0	37	51		
3	W b S	Clear	30 4 0	37	48	50	
4	W b N	Clear	29 9 6	44	53	55	
5	N	Clear	30 1 0	40			
6	N	Clear	30 3 8	41	49	51	
7	S W	Clear	30 2 3	43	58	60	
8	S W	Clear	30 0 4	54	62	67	
9	N	Rain	29 8 0	52	47	46	Snow in the evening.
10	N b W	Cloudy	30 1 0	41	45	47	
11	N W	Clear	30 2 8	36	45	46	
12	S W	Clear	30 1 2	36	47	50	
13	S W	Clear	30 0 0	40	57	60	
14	N W	Cloudy	30 1 2	45	50	57	
15	N W	Clear	30 1 0	46	58	60	
16	W	Cloudy	30 0 0	46	59	62	
17	S W	Clear	29 9 0	49	51	59	
18	N E	Cloudy	29 9 0	47	51	56	
19	N b W	Clear	29 8 9	48	50	56	
20	N	Clear	30 0 8	46	49	51	
21	W	Clear	30 1 0	36	45	49	
22	S W	Clear	30 0 0	40	47	55	An Aurora.
23	N	Clear	30 0 0	43	44	45	Cloudy evening.
24	N E	Snow	30 0 0	40	41	43	
25	N	Cloudy	30 0 4	35	46	48	
26	S W	Cloudy	30 1 0	41	49	52	
27	S W	Cloudy	29 9 0	50	56	59	
28	N E	Rain	29 9 0	41	44	46	
29	N W	Clear	30 1 0	35	37	39	
30	N	Clear	30 4 6	25	27	28	
31	E by N	Clear	30 4 5	27	32	38	

JANUARY, 1778.

Days.	Winds.	Weather.	Barometer.	Thermometer. 8 H.	12 H.	3 H.	Observations.
1	N E	Clear	30 3 9	30	39	40	
2	S W	Cloudy	30 3 4	40	47	49	
3	S W	Cloudy	30 1 0	50	55	58	
4	W b N	Clear	30 0 0	41	57	59	
5	S W	Clear	30 1 0	50	60	63	
6	S W	Clear	30 2 0	55	62	66	
7	N b W	Clear	30 3 0	50	56		
8	W	Rain	30 1 0	45	52	57	
9	W	Clear	29 6 0	48			
10	S W	Clear	29 9 3	47	58	61	
11	N	Rain	29 9 7	48	47	47	
12	N W	Clear	30 1 3	43	47		
13	N	Clear	30 4 3	37	50	50	
14	W	Clear	30 1 8	47			
15	N	Clear	30 2 9	30	37	39	
16	N	Clear	30 3 5	27	40	43	
18		Clear	29 7 7	41			
19	W	Clear	30 0 1	41	45	47	
20	W	Cloudy	29 9 0	40	43	46	
21	S W	Cloudy	29 8 0	40	51	56	
22	N W	Clear	29 8 1	41	52	55	
23	N E	Cloudy	29 9 3	34	37	40	
24				37			
25	S W	Cloudy	29 8 0	47	50	57	
26	N W	Clear	30 1 0	38	42	44	
27	N W	Clear	30 3 2	32	40	43	
28	S W	Cloudy	30 2 0	38	52	57	
29	S W	Rain	29 9 3	61	62	63	
30	N W	Clear	30 3 2	47	55	56	
31	S W	Rain	30 2 0	48	54		

FEBRU-

FEBRUARY, 1778.

Days.	Winds.	Weather.	Barometer.	Thermometer. 8 H.	12 H.	3 H.	Observations.
1	S W	Clear	30 3 0	54	59		
2	W	Cloudy	30 4 0	43	48	49	
3	W by S	Clear	30 3 3	40	53	57	
4	S W	Clear	30 3 3	56	60	61	
5	S W	Clear	30 3 0	52	61	62	
6	S E	Clear	30 3 0	57	57	57	
7	N W	Clear	30 1 8	49		55	
8	N E	Clear	30 2 7	45	44	44	
9	N W	Clear	30 2 7	31	40	41	
10	S E	Cloudy	30 1 3	35			Much rain in the evening.
11	W	Rainy	30 1 4	42	43	43	
12	N W	Clear	30 0 7	42	47	47	
13	W b N	Clear	30 0 9	40	47	48	
14	W	Clear	30 1 7	40	45	46	
15	E	Rainy	30 1 6	40	42	43	
16	W	Cloudy	30 1 0	41			
17	N W	Clear	30 3 3	31	40	42	
18	N W	Clear	30 3 4	32	41	42	
19	S W	Cloudy	30 1 0	39			
20	S W	Rain	29 8 3	45	46		
21	N W	Clear	30 1 0	38	45	46	
22	E b S	Cloudy	30 0 5	36	37	37	
23	W	Clear	29 7 7	39	49	47	
24	W b N	Clear	30 0 2	39	54		
25	S W	Cloudy	30 0 2	47	58	60	
26	S W	Cloudy	29 9 0	60	70	70	
27	W	Rain	29 6 6	64	60	59	
28	W b S	Clear	29 9 0	42	51		Wind W at 8.

MARCH, 1778.

Days.	Winds.	Weather.	Barometer.	Thermometer. 8 H.	12 H.	3 H.	Obſervations.
1	W	Clear	29 9 0	36	47	48	
2	N W	Clear	30 0 6	35	41	44	
3	E b N	Cloudy	27 6 0	36	32	31	Snows very faſt.
4	N W	Clear	30 0 6	22½	35	39	
5	S W	Clear	30 0 6	23	42	45	
6	W	Clear	30 2 7	42	49	53	
7	S W	Clear	30 2 5	47	57	60	
8	E	Clear	30 2 0	45	46		
9	E	Cloudy	30 1 8	45	48	49	
10	N	Cloudy	30 1 9	45	47	57	
11	S W	Cloudy	30 1 5	47	52	62	
12	S W	Clear	30 0 4	59	69	70	Peach trees in bloſſom.
13	S W	Clear	30 0 5	68	71	76	
14	S W	Clear	30 0 6	69	72	79	
15	S W	Cloudy	30 1 7	65	66	65	The wind at N W for part of the day.
16	S W	Cloudy	30 0 8	63	74	76	
17	S W	Clear	29 8 6	67	67	65	
18	N	Clear	30 2 9	51	51	58	
19	S	Cloudy	30 1 9	47	54	55	
20	N W	Clear	29 9 6	50	50	60	
21	N W	Clear	29 9 4	49	51	59	
22	N	Clear	30 2 6	39	47	54	
23	N b E	Cloudy	30 1 0	44	45	56	
24	E	Clear	30 0 6	45	51	53	
25	E	Rain	29 9 6	45	47	48	
26	S E	Rainy	29 6 5	48	57		
27	N	Clear	29 7 1	46			
28	N W	Clear	29 8 0	47	56	57	
29	S E	Rainy	29 3 0	50	54		Winds very high.
30	N W	Cloudy	29 5 0	45	48	49	Ditto.
31	N W	Clear	29 9 0	47	49	54	

APRIL, 1778.

Days.	Winds.	Weather.	Barometer.	Thermometer. 8 H.	12 H.	3 H.	Obfervations.
1	N	Clear	29 9 0	48	54	55	
2	S E	Clear	29 7 3	54	57	59	
3	W	Clear	29 7 8	45	54	55	
5	W	Clear	29 7 7	44	57		
6	W	Clear	29 8 0	47	59	60	
7	N W	Cloudy	29 8 0	52	56	58	
8	N W	Clear	30 0 0	52	60	61	
9	E	Clear	30 2 0	51	60	61	
10	S W	Clear	30 2 0	51	63	64	
11	S E	Rainy	30 1 8	59	60	61	
12	E b S	Rainy	30 1 0	58	60	60	
13	S	Clear	30 1 3	59	63	70	
14	S W	Rainy	30 1 0	61	73	71	
15	S W	Rainy	30 0 5	66	67	69	
16	N	Rainy	29 9 0	59	62	65	
17	N W	Clear	29 7 7	58			
18							
26	W	Clear	29 8 6	56	65	61	
27	E	Rainy	29 9 3	58	56	56	
28	E b N	Rainy	29 7 3	57	58	57	
29	E b N	Rainy	29 5 7	57	57	57	
30	N b W	Clear	29 6 5	56	59	59	Lightening and thunder.

MAY, 1778.

Days.	Winds.	Weather.	Barometer.	Thermometer. 8 H.	12 H.	3 H.	Obfervations.
1	N W	Clear	29 6 8	54	58	59	
2	N E	Clear	29 6 2	55	57	58	
3	N E	Clear	29 7 6	55			
4	N W	Clear	29 6 3	56	62	63	Rain.
5	N W	Clear	29 8 8	61	68	71	
6	S W	Clear	29 8 2	62	72	77	
7	S E	Clear	29 8 0	67	76	79	
8	N	Clear	29 8 6	65	66	69	
9	W	Clear	30 0 4	59	60	66	
10	S	Clear	30 0 3	65			
11	W	Clear	29 8 0	68	75	79	
12	S	Clear	30 0 0	69	76	78	
15	S W	Clear	30 1 7	69	75	77	
16	S W	Clear	30 1 3	75	80	83	Rain.
17	S W	Clear				79	Rain.
18	S W	Clear	30 1 2	78	80	83	
19	S W	Clear	30 0 0	78	82	85	
20	S W	Clear	30 0 0	75	82	85	
21	S W	Clear	30 0 4	71	80		
22	N E	Rain	30 0 3	70	70	71	
23	N by E	Clear	30 1 0	65	74	75	
24	E	Clear	30 0 3	64	72	80	
25	S W	Clear	29 9 0	75	81	85	
26	N	Clear	29 9 4	74	81		
27	W	Clear	29 8 0	75	81	82	Rain.
28	W	Clear	29 9 0	70	72	73	
29	N W	Clear	30 1 7	60	63	65	
30	W	Clear	30 3 0	60	62	63	
31	E by S	Cloudy	30 2 9	60	66	70	

JUNE, 1778.

Days.	Winds.	Weather.	Barometer.	Thermometer. 8 H.	12 H.	3 H.	Obſervations.
1	S E	Rainy	30 1 0	65	69	72	
2	N W	Cloudy	30 0 0	70	75	76	
3	N b E	Cloudy	30 0 0	70	74	75	
4	E	Clear	30 0 2	64	70	71	
5	E	Cloudy	30 0 2	64	70	71	
6	S E	Cloudy	30 0 0	65	75	78	
7	E	Cloudy	29 8 8		75	73	
8	N	Clear	29 8 7	65	74	75	
9	N	Clear	30 0 6		75	76	
11	W b S	Clear	29 9 9	70	80	84	
12	N E	Cloudy	29 8 0	70	73	74	Rain.
13	N E	Clear	29 9 0	68	73	72	
14	N E	Clear	29 9 6	64	65	69	
15	N E	Cloudy	30 0 3	68	70	72	
16	W	Clear	30 1 0	67	75	78	
17	S W	Clear	30 0 0	70	80	84	
18	S W	Clear	29 9 5	78	87	86	
19	E	Rainy	29 9 3	78	79	79	
20	E	Rainy	29 9 0	79	79	79	
21	S E	Cloudy	29 9 7	75	83	86	Rain.
22	S W	Clear	29 9 9	76	83	87	Much Rain.
23	S b E	Cloudy	29 9 5	76	77	77	
24	S b E	Cloudy	29 9 2	75	80	81	
25	S W	Clear	29 9 7	78	84	86	
26	S W	Clear	30 0 0	78	85	87	
27	S W	Clear	30 0 0	80		86	
28	S W	Clear	29 9 5	80	87	86	
29	S W	Clear	29 9 9	75	86	88	
30	S W	Clear	30 0 0	80	86	89	

JULY, 1778.

Days.	Winds.	Weather.	Barometer.	Thermometer. 8 H.	12 H.	4 H.	Obſervations.
1	S W	Clear	29 9 9	80	86	89	
2	W	Clear	29 9 0	70	84	80	
3	W	Clear	29 9 5	77	83	81	Rain.
4	N W	Cloudy	29 8 2	73	75	76	
5	E	Clear	30 0 5	73	76	79	
6	N E	Clear	30 1 6	75	77	81	
7	W	Clear	30 0 7	76	79	88	
8	S W	Clear	30 0 3	78	85	86	
9	S W	Clear	30 0 0	80	86	88	Rain.
10	S W	Clear	30 0 0	80			
11	S W	Clear	30 0 0	80	88	90	
12	S W	Clear	29 9 5	80	87	88	Rain.
13	E	Cloudy	29 9 7	77	80	81	
14	N E	Cloudy	30 0 0	70	73	75	
15	N W	Clear	30 2 0	71	75	77	
16	N E	Clear	30 2 5	73	75	78	
17	E	Cloudy	30 2 2	73	76	77	
21	N E	Cloudy	30 0 0	77	77	78	Rain.
22	E	Rain	29 8 8	75	76	76	Rain.
23	N E	Cloudy	29 9 0	69	73	75	
24	E	Clear	29 9 9	72	77	77	Rain.
25	E	Cloudy				77	Rain.
26	N E	Rain	30 1 7	73	75	77	Rain.
27	N E	Cloudy	30 1 6	73	75	78	Rain.
28	S W	Clear	30 0 7	75	82	85	Rain.
29	S W	Clear	30 0 0	75	83	86	
30	S W	Clear	30 0 0	78	85	87	
31	S W	Clear	30 0 0	78	85	87	

AUGUST, 1778.

Days.	Winds.	Weather.	Barometer.	Thermometer. 8 H.	12 H.	4 H.	Observations.
1	S W	Clear	30 0 0	79	86	90	
2	S W	Clear	30 0 0	80	81	89	
3	S W	Clear	29 9 7	78	84	86	
4	S W	Cloudy	29 9 6	75	77	79	
5	S W	Cloudy	30 0 5	75	75	81	
6	S W	Clear	30 1 3	76	79	82	
7	S W	Clear	30 1 9	76	80	83	
8	S E	Clear	30 2 0			85	
9	E	Cloudy	30 0 0	76		81	
10	S	Clear	30 0 2	77	78	72	
11	E	Rain	29 7 3	77	77	76	Much rain.
12	N W	Cloudy	29 8 0	72			
13				67	67	68	Rain.
14	S E	Cloudy	29 7 8	66	67	67	
15	S	Cloudy	29 9 0	68	70	75	
16	S	Cloudy	29 9 9	75	80	82	
17	S W	Cloudy	30 0 2	75			